

Witness Testimony of David Allaway
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Chairman Pallone, Ranking Member McMorris Rodgers, Chairman Tonko, and Ranking Member McKinley, thank you for the invitation to present in today's hearing. For the record, my name is David Allaway and I am senior policy analyst at the Oregon Department of Environmental Quality.

I have worked in the field of waste, recycling and materials since 1989, in both the private and public sectors. While my recent experience is centered in Oregon, I have worked on recycling projects in many other parts of the country.

The State of Oregon recently conducted a deep, multi-year examination of the challenges of, and opportunities to improve, recycling. That study informed state legislation that was proposed and adopted last year. Oregon's Plastic Pollution and Recycling Modernization Act (SB 582, 2021) represents a major reform to our state's recycling policy.

Recycling services are offered in more than 10,000 communities across all fifty states. And while there are significant differences in those services, there are also many dynamics that are shared. To inform this committee's consideration of potential federal legislation today I will introduce Oregon's experience, share some of our key learnings, and summarize the policy framework recently adopted by our state.

Background and Process: Oregon's Recycling Steering Committee

In 2017, responding to high levels of garbage in shipments of recyclable commodities imported from North America and Europe, the government of China adopted a policy titled "National Sword." This policy essentially closed China's doors to such shipments, and it was reported that overnight, 40% of the global trade in waste plastics and paper was disrupted.

Oregon, as a state that was heavily reliant on Chinese end markets for many of our collected recyclables, was significantly impacted. The resulting disruption exposed numerous problems with Oregon's recycling systems that had been quietly growing for years.

In response, the State convened a Recycling Steering Committee. Comprised of 16 stakeholders representing state and local government, waste collectors, processors, end markets, and others, the Steering Committee was charged with recommending changes to Oregon's recycling systems, and to do so by consensus if possible. I co-chaired the Committee, which held close to 100 meetings over a 29 month period.

The Committee and Department undertook significant research:

- We studied the current recycling system and evaluated it against 16 outcomes that the Committee identified it desired of a future system.
- We researched materials, collection and processing technologies, and the potential costs of different collection and processing infrastructure scenarios.
- We also evaluated the potential environmental impacts and benefits of those scenarios, and estimated the value of those impacts and benefits in terms of dollar costs to society.
- We examined policy frameworks from other states and nations, with a particular focus on extended producer responsibility, a policy framework that is commonly applied to recycling in many other nations.
- The State also sought out the perspectives of other parties that were not directly represented in the Committee, with a particular focus on people whose voices are often not heard in this policy space, including the front-line workers in recycling facilities, and residents of rural areas and of multi-family housing.

Key Research Findings

Out of all of that research, as well as other studies that Oregon DEQ has recently conducted, I would like to highlight several key findings. I am happy to provide citations and documentation to members of the subcommittee and their staff upon request.

1. Recycling offers the potential for real, yet modest, environmental benefits.

Done well, recycling can reduce the environmental impacts associated with resource extraction and primary material manufacturing. The use of recycled feedstocks in product manufacturing almost always allows those products to be produced with less energy and oftentimes with a reduction in water or air pollution, including greenhouse gases.

These potential benefits are meaningful but also relatively modest. For example, an assessment by the EPA in 2009 found that achieving a nationwide recycling and composting rate for municipal solid waste of 50 percent (an accomplishment that few individual states have achieved) would further reduce the life cycle greenhouse gas emissions of materials produced in the U.S. by only two to four percent (above and beyond reductions that recycling is already contributing to).

2. Preventing waste at the source has even greater potential to reduce the environmental impacts of materials.

Solutions in addition to recycling also need to be activated, including waste prevention (using fewer materials), and prioritization of low-impact materials and production methods.

Prevention, the “reduce, reuse” part of “reduce, reuse, recycle,” is widely acknowledged as a policy priority over recycling, yet is often overlooked in both policy discourse and funding decisions.

The potential benefits of prevention are significantly greater than recycling. For example, a study from Oregon DEQ found that drinking water from a recyclable PET bottle and recycling the bottle would reduce climate impacts by about 36 percent, compared to disposing of the bottle. Yet avoiding the single-use container and drinking water from the tap in a refillable bottle could reduce climate impacts by more than 99 percent, even when the impacts of dishwashing are taken into account.

3. Recycling must be done responsibly to avoid harm – and U.S. programs have many opportunities to improve.

Some activities undertaken in the name of “recycling” can result in social and environmental harm. Standards and regulation are needed to ensure that recycling delivers on its promise of environmental benefit.

As an example, the photographs below are from East Java. Subsequent to China’s adoption of import restrictions, a paper mill in Indonesia had purchased bales of waste paper from the U.S. and Europe. However, due to inadequate sorting of commingled recyclables in those countries, the bales of paper were contaminated with other materials, including plastics. The paper mill screened the plastics and disposed of them in the surrounding countryside, where they were picked through and then accumulated; some were burned in an uncontrolled manner while others washed into rivers. A recent article in the journal *Science Advances* estimates that mismanaged plastics resulting from such exports from the U.S. (estimated at 0.15 – 0.99 million metric tons in 2016) may be on par with domestic littering in terms of the amount of plastic waste this country contributes to the world’s oceans.



Photos courtesy of Megan Ponder

4. The U.S. public is deeply confused about what and how to recycle.

Both national and local surveys confirm that the American public is very confused about what and how to recycle. For example, a recent survey in the Portland, Oregon metropolitan area found that nearly 90 percent of households believe they can recycle via their curbside collection service materials which, in fact, those recycling programs do not accept. This is despite millions of dollars spent by brands and municipalities over the last decade promoting and educating proper recycling behavior.

There are several causes of this confusion, and a leading one is confusing and misleading labels on products and packages. The federal government has a unique ability to influence positive change in this space, due to national distribution systems and the challenges of effectively regulating labeling at the state level.

5. The resulting “contamination” of the recycling system is highly disruptive.

The recycling community refers to materials improperly placed into the recycling system as “contamination.” Contamination can severely impact the viability of recycling. Contamination makes recycling more expensive, in part by making the job of sorting out mixed recyclables (which typically relies on a combination of machinery and manual labor) more complex, difficult and even dangerous. Contamination drives up the cost of recycling services, thereby undermining their economic viability, especially in locations where disposal is inexpensive.

Further, even as processing facilities strive to remove contamination and ship only clean bales of commodities to end markets, no such facility is effective at removing all contamination. Smelters, mills and other industrial end users have limited willingness and economic ability to purchase contaminated materials. When domestic end markets reject bales of contaminated recyclables, exports become the market option of last resort – and exporting contaminated bales can harm both people and the environment (see photos above).

6. The transactional economics of recycling are challenging – because market prices fail to account for social costs.

Recycling suffers from what economists refer to as “externalities” – the fact that many environmental impacts are not reflected in the market prices that guide decisions by businesses and consumers. The accounting systems of businesses undercount the environmental impacts of virgin resource production and the environmental benefits of recycled materials. The result is in an under-investment in the recycling system, and an over-investment in virgin resource use and production.

Waste prevention and recycling can and do reduce many costs to society. For example, by reducing pollution, prevention and recycling reduce healthcare and other costs associated with illness, disease, disability and death. By conserving resources and reducing greenhouse gas emissions, prevention and recycling reduce costs associated with resource depletion and climate change. All of these costs (and benefits) are very real costs to society – but they are not reflected in the market prices that drive day-to-day decisions by producers or waste managers. Classical economic theory indicates that the resulting underinvestment in prevention and recycling leads to an allocation of resources that is not optimal from the point of view of society.

It also results in the appearance that recycling is “expensive.” But the alternative – to not recycle, or to recycle poorly – is even more expensive. Recent research by Oregon DEQ found that a modernized and responsible recycling system for Oregon might cost on the order of \$240 million a year – and that such an investment would likely recover its expenses through a reduction in social costs (health impacts, climate change, etc.) by an amount three to five times higher.

Differences in waste disposal costs make the economics of recycling more or less viable in different states and regions. However, the challenges I've outlined above are applicable across the nation.

7. Recent new investments are helpful but are not sufficient.

Private investors, end markets, producers and the federal government have all recently made significant investments in recycling. North American capacity to use collected wastes, such as at paper mills and plastics reclaimers, has grown significantly in response to recent challenges with export markets. Producer membership groups such as the Recycling Partnership are making important investments in expanding collection opportunities. The bipartisan Infrastructure and Investment Jobs Act will represent the single-largest investment in recycling the federal government has ever made.

These investments however are not yet adequate to provide for a modernized, responsible and effective recycling system nationwide.

The Infrastructure and Investment Jobs Act will provide \$70 million per year, nationwide for five years. In contrast, Oregon DEQ estimates that approximately \$80 million per year in perpetuity is needed to modernize Oregon's recycling system alone.

In addition, voluntary pledges and investments from individual producers have additional drawbacks: their long-term future is uncertain, and they also create a problem of free-riders, where all producers benefit from investments that only a subset pay for.

8. The recycling system in the U.S. does not distribute burdens or benefits in a fair or equitable manner.

DEQ's examination of Oregon's recycling system highlighted how it distributes burdens and benefits inequitably. Residents of single-family homes and of communities that are in closer geographic proximity to infrastructure have more recycling opportunities and at lower cost. The transition to commingled collection has shifted worker injuries and risk away from collection workers to processing facility workers, who are often people of color. Inadequate processing and unregulated exports result in health impacts and environmental harm to vulnerable populations in Asia and elsewhere. And Oregon ratepayers pay for recycling services that reduce environmental impacts in other states and nations.

The Plastic Pollution and Recycling Modernization Act addresses these and other social inequities with a number of changes including collection service improvements, programs to reduce contamination, a living wage requirement for processing facility workers, regulation of processing facility outcomes, a responsible end markets requirement, cost internalization via extended producer responsibility, and a periodic review of equity in the state's recycling system.

9. Solutions to “improve recycling” may have unintended consequences, unless the full impacts of materials are taken into account.

Recycling is part of a larger system, and the impacts of the full system need to be considered thoughtfully during policy development.

For example, in an effort to reduce contamination and increase recovery rates, some businesses and policymakers have proposed requiring all packaging materials to be recyclable or compostable. However, such a policy will not necessarily reduce impacts on the environment. The impacts of materials over their full life cycle must be taken into account, including differences in amounts of materials used and the impacts of producing those materials in the first place.

Recent research by Oregon DEQ reviewing hundreds of comparisons of packaging options, found that the attributes of “recyclable” and “compostable” are highly inconsistent and unreliable predictors of environmental impact. While *recycling* and the displacement of virgin materials with *recycled content* is typically beneficial to the environment, materials that are more easily *recyclable* are not necessarily better.

As an example, DEQ evaluated the environmental impacts of three different methods of packaging coffee: a recyclable steel can, a recyclable plastic tub, and a non-recyclable multi-material flexible pouch. Even after crediting the first two options with the benefits of extremely high recycling rates, the flexible package (sent to landfill) was found to have lower impacts in most categories of impact, simply because it uses much less material and can be produced using fewer resources and resulting in less pollution.

Requiring brands that use these lightweight and resource efficient packaging formats to switch to a recyclable or compostable alternative could have profound and regrettable consequences to the environment, and could even harm our existing recycling and composting infrastructure by forcing it to accept materials that are incompatible with current infrastructure.

Oregon’s Policy Solution: A Summary

After considerable discourse and debate, the 16 members of Oregon’s Recycling Steering Committee ultimately found consensus on a broad-ranging package of reforms to modernize Oregon’s decades-old recycling policy.

That consensus solution formed the basis of Oregon’s Plastic Pollution and Recycling Modernization Act (SB 582, 2021) which was adopted by Oregon’s Legislature and signed into law on August 6, 2021.

The Act maintains existing elements of Oregon’s recycling system that work well, and mandates improvements to elements that do not. The organizing principle of the Act is one of “shared responsibility,” with obligations created for households and businesses that use the recycling system, local and state government, waste collection companies, the facilities that sort and

market mixed recyclables, and the producers of packaged items, printing and writing paper, and food serviceware.

This last element – a manifestation of extended producer responsibility (EPR) – made Oregon one of the first three states in the U.S. to require producers to share in the responsibility for a modernized and responsible recycling system for packaging.

While EPR for packaging and printed paper is new to the U.S. (Maine, Oregon and Colorado all adopted their laws in the last twelve months), it is commonplace in other nations. Oregon already implements similar laws addressing paint, electronic waste, and pharmaceuticals, and these are three of more than 100 such laws implemented by states across the nation.

Oregon's Act requires local governments to improve access and opportunities for recycling. It requires commingled processing facilities to meet new standards for material quality and use of responsible end markets. It establishes new standards or programs to address social equity, waste prevention, material design, impact disclosure, and plastics recycling. And it requires producers to pay fees to a producer responsibility organization, based on the quantity and types of covered products they sell or distribute into the state.

The producer responsibility organization(s), in turn, are responsible for a mix of financial and operational obligations that are all aimed to improve service, environmental, and societal outcomes. But as a shared responsibility framework, the obligation of producers remains limited, and in a typical year we expect that system users (households, businesses) will continue to pay for the majority of program operating costs.

Extended Producer Responsibility

There are many different ways that EPR policy can be designed for packaging and printed paper. Among the key options or variables, three stand out as perhaps most significant:

- **Financial vs. operational obligations:** Producers can be assigned obligations that are limited to reimbursing other parties in the recycling system, or can be given direct obligations to oversee operational elements, such as collection or processing of recyclables. Oregon's law takes a hybrid approach.
- **Full vs. partial responsibility:** Producers can be assigned full responsibility for the recycling system, or responsibility can be shared with other parties.
- **Degree of producer control:** As a regulatory approach, all EPR systems rely on some degree of government oversight. But policies can vary significantly with regard to how much voice and control producers have over recycling system design and operations.

There is growing support from producers for some form of legislated producer responsibility. I believe that this stems from a recognition that America's recycling system has reached both a crisis, and a crossroads; that decades of voluntary solutions by industry have been helpful but insufficient; and that producers can and should play a role in solving the problems and realizing the full benefits of recycling.